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ABSTRACT

The educational community lacks tools for assessing the nonacademic growth of students--their growth as persons and as social beings. This paper describes the development of an attitude inventory based on an interdisciplinary model of psychosocial maturity. The Psychosocial Maturity Inventory, a self-report instrument, is comprised of nine subscales and is suited for the assessment of youngsters in the approximate age range 11 to 18. Among the studies reviewed are ones which (1) specify at various age levels the internal consistency of the subscales; (2) report the association between the subscales and various measures of academic achievement; and (3) describe the relationship of the subscales to other measures of personality, such as "faking good," anxiety and self esteem. Factor analyses of the Inventory provide an empirical base for testing the proposed theoretical structure of psychosocial maturity. The Appendices provide additional detail on the psychometric properties of the Inventory. (Author)

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Report No. 187

December, 1974

MEASURING PSYCHOSOCIAL MATURITY: A STATUS REPORT

Ellen Greenberger, Rosemary Hollick, Ruthellen Josselson,

Marie Makurath and Daniel McConochie

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MEASURING PSYCHOSOCIAL MATURITY: A STATUS REPORT

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The Johns Hopkins University

Baltimore, Maryland

Introductory Statement

The Center for Social Organization of Schools has two primary objectives: to develop a scientific knowledge of how schools affect their students, and to use this knowledge to develop better school practices and organization.

The Center works through three programs to achieve its objectives. The Schools and Maturity program is studying the effects of School, family, and peer group experiences on the development of attitudes consistent with psychosocial maturity. The objectives are to formulate, assess, and research important educational goals other than traditional academic achievement. The School Organization program is currently concerned with authority-control structures, task structures, reward systems, and peer group processes in schools. The Careers program (formerly Careers and Curricula) bases its work upon a theory of career development. It has developed a self-administered vocational guidance device and a self-directed career program to promote vocational development and to foster satisfying curricular decisions for high school, college, and adult populations.

This report, prepared by the Schools and Maturity Program, brings together all work to date on the development and validation of the Psychosocial Maturity Inventory.

Abstract

The educational community lacks tools for assessing the nonacademic growth of students -- their growth as persons and as social beings. This paper describes the development of an attitude inventory based on an interdisciplinary model of psychosocial maturity. The Psychosocial Maturity Inventory, a self-report instrument, is comprised of nine subscales and is suited for the assessment of youngsters in the approximate age range 11 to 18. Among the studies reviewed are ones which (1) specify at various age levels, the internal consistency of the subscales, (2) report the association between the subscales and various measures of academic achievement, and (3) describe the relationship of the subscales to other measures of personality, such as "faking good," anxiety and self esteem. Factor analyses of the Inventory provide an empirical base for testing the proposed theoretical structure of psychosocial maturity. The Appendices provide additional detail on the psychometric properties of the Inventory.

The potency of the school, especially the school peers, in molding children's attitudes, values and personal dispositions is attested to by a substantial body of research (e.g., Andersson, 1969; Coleman, 1961; Kandel & Lesser, 1972; Lacey, 1970; McDill & Coleman, 1965). In a recent paper, however, Greenberger and Sørensen (1974) have observed that:

> ... except at the college level (Jacob, 1958; Newcomb, 1943; Sanford, 1962) ... assessment of the school experience has focused almost exclusively on academic achievement. The preeminent position of academic achievement in educational assessment is due less to a good theory of academic achievement than to the existence of standardized instruments to assess a wide range of achievement. Serious widespread concern for the impact of the school experience on children's personal and social growth awaits both a compelling formulation of ..."nonacademic" development and the creation of [psychometric] devices that permit its assessment.

An interdisciplinary model of psychosocial development, based on the concept of psychosocial maturity, was recently described by Greenberger and Sørensen (1974). Briefly, the model attempts to integrate goals of socialization (i.e., attributes of individuals required to make a society function smoothly) with goals of development (i.e., attributes which represent the optimal growth of the individual in his own right). Thus, the concept of psychosocial maturity is concerned with the survival of both the person and the society. The model proposes that psychosocial maturity is reflected in three general capacities, which correspond to three general demands made by all societies on individuals. They are: (a) the capacity to function effectively on one's own, or individual adequacy; (b) the capacity to interact adequately with others, or interpersonal adequacy; and (c) the capacity to contribute to social cohesion, or social adequacy. That is, in all societies "socialized" and "developed"

individuals should be self-sufficient in some degree and take responsibility for their own survival, should be able to relate to others in stable and predictable ways, and should be able to meet threats to the integrity of the social group with efforts to restore social solidarity. In different societies, the specific attributes which serve as indicators of these general capacities may vary considerably. For this society, it has been argued that the nine attributes listed and described briefly in Table 1 are indicators of the three general capacities of mature individuals.

Table 1 About Here

The major purpose of this paper is to report on the development of a Psychosocial Maturity Inventory based on the integrative concept of psychosocial maturity presented in Table 1. With a view toward the eventual usefulness of these scales for research purposes, the objective has been to devise scales that are manageable in length as well as acceptable in psychometric properties. A second purpose of this paper is to test the theoretical relationships specified by our model of psychosocial maturity against empirical data concerning the relationships among subscales.

Method

1. Scale construction

Form A: Three hundred forty-nine items were written by the first author to assess nine aspects of psychosocial maturity.[1] This set of items is referred to as Form A of the Psychosocial Maturity (PSM) Inventory.

The "correct" direction of response was determined a priori, in accordance with the theory of psychosocial maturity sketched in Table 1. Each item was answered on a four-point scale, the intervals of which were labeled "strongly agree", "agree slightly", "disagree slightly", and "strongly disagree". The successive response intervals were subsequently scored 4, 3, 2 and 1, with the high score representing the most mature response.

A total of 2,291 children distributed among grades 5, 8 and 11, and selected from a stratified random sample of South Carolina public schools, responded to the original set of items on optically scannable answer sheets.[2] Item analyses on this data-set resulted in Forms B and C of the Psychosocial Maturity Inventory.

Form B: Form B contains 188 items (compared to the original 349), distributed among nine subscales with an average length of 20.9 items. The objective of Form B was to create a single inventory of more practical length than the original inventory, for use at all grade levels from fifth through twelfth. The purpose of developing a single inventory for this entire age range was to facilitate the study of over-time change in the individual. Item-to-test correlations for the nine subscales were computed separately at each grade level. Inspection of these correlations indicated which items should be discarded in order to achieve a set of subscales characterized by the maximum mean internal consistency across the three grade levels. Any item eliminated from a subscale was cast out at all three grade levels, in order to preserve a single inventory with constant content.

Table 2 shows sample items from Form B of the Psychosocial Maturity Inventory. Table 3 gives estimates of internal consistency for each

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Table 2 About Here

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subscale, based on Kuder Richardson forumula 8.[3] Estimates of internal consistency are given for the original South Carolina sample and for various replication samples. Inspection of the figures given for Form B in Table 3 indicates that subscale homogeniety is very adequate in all but a few cases at the lowest grade level; and that such homogeniety can be reproduced with samples other than those originally used to construct the subscales.

Table 3 About Here

Form C: The objective of creating Form C of the Psychosocial Maturity Inventory was to provide a good approximation to Form B which could be used when test-administration time was limited. Item-to-test correlations for Form B were examined at each grade level and items discarded in order to maximize the internal consistency at each grade level (instead of maximizing the average internal consistency for the three grade levels, as in Form B). Consequently, Form C has somewhat different content at grades 5, 8 and 11. The total number of items in Form C varies from 89 to 93, and average subscale length is about 10 items. A final version of Form C, known as Form D, differs only slightly: a few changes of wording have been made and three items on the Trust subscale have been replaced.[4]

Correlations of Form C with Form B are high, indicating that the short inventory closely approximates the longer one. For the South Carolina sample, the average correlation between Form B and Form C subscales is .91, .89, and .86, for grades 5, 8 and 11, respectively. For the same samples retested one year later, the average correlations are .91, .90 and .86

for grades 6, 9, and 12, respectively. For samples of students in Pennsylvania and a small Massachusetts college, comparable figures are .91 and .94. Table 3 also gives KR 8 estimates of internal consistency for the Form C and Form D subscales, for the test construction sample and a representative selection of replication samples. It is clear that the short subscales have a high degree of homogeniety.

2. Validation studies

A number of studies have been carried out to date in order to validate the construct of psychosocial maturity and to explore the divergent and concurrent validity of individual subscales. These studies are summarized briefly below.

Because psychosocial maturity is conceived of as a developmental phenomenon, it was anticipated that mean scores on the Psychosocial Maturity Inventory would increase as children grew older. Cross-sectional data from the South Carolina sample, for whom Form B and Form C PSM scores were available, are consistent with this expectation. With two exceptions, fifty-four paired comparisons of mean subscale scores between grade levels (5th versus 8th, 8th versus 11th, and 5th versus 11th) yielded values of t significant at the .05 level or better, the older children scoring higher on each subscale than the younger children (Greenberger et al., 1974).[5] Longitudinal data on this sample are now being analyzed and will yield more definitive findings on over-time growth in psychosocial maturity.

Two investigations are pertinent to the divergent validity of the Psychosocial Maturity Inventory. The first of these examined the relationship of psychosocial maturity scores to scores on a short but reliable

version of the Crowne-Marlow social desirability scale (Greenberger et al., 1974). The questions of the study were: do high psychosocial maturity scores merely reflect an awareness of the socially desirable point of view? Are high scores, therefore, contaminated by a tendency to "fake good"? Data from all three grade levels in the South Carolina sample supported an answer of "no" to these questions. Correlations between the nine psychosocial maturity subscales and social desirability ranged from -.30 to .26. The highest positive associations of social desirability were with Work Orientation and Communication Skills; the highest negative associations were with Enlightened Trust and Openness to Socio-Political Change. Additional evidence for the lack of overlap between the concepts of psychosocial maturity and social desirability comes from the observation that while mean PSM scores rise significantly between grades 5 and 11, social desirability scores decline significantly (Greenberger et al., 1974). The latter result replicates a finding based on an early and partial set of psychosocial maturity subscales (Greenberger, 1972).

The second investigation of divergent validity concerns the relationship between psychosocial maturity and various measures of intellectual ability. Achievement in school, like psychosocial maturity, reflects the adoption of culturally sanctioned values. The questions of these studies, therefore, were: does variation in psychosocial maturity merely reflect variation in intellectual achievement? Are maturity scores heavily contaminated by a youngster's brightness?[6]

Recent standardized achievement test scores were available for several subsamples of the South Carolina sample: 153 fifth graders, Iowa Test of Basic Skills; 281 eighth graders, Iowa Test of Basic Skills; and 305 eighth

graders, California Test of Basic Skills. For the fifth and eighth graders who took the Iowa test, correlations of the reading total with PSM scores were quite similar and fell in the range of .07 to .38. The lowest r in both samples was in relation to the Communication Skills subscale; the highest r was in relation to the Openness to Socio-Political Change subscale. Arithmetic totals showed correlations of the same order of magnitude as reading totals in grade 5, but were considerably lower in grade 8, with a range of .01 to .20. For the sample of eighth graders who took the California Test, both sets of correlations were higher. Correlations of PSM scores with reading totals ranged from .39 to .57 (the low and high r's relating to the same two subscales noted above); correlations of PSM scores with arithmetic totals were substantially lower than with reading totals, ranging from .16 to .26.

In an effort to obtain uniform achievement test data on a sizeable sample of individuals, a 15-minute test of verbal achievement, "Level of Previous Learning," was administered to a sample of approximately 2,000 Pennsylvania eleventh graders. Scores on this test, prepared by Educational Testing Service, yielded correlations very much like those for the reading total in the last sample described (i.e., eighth graders, California Test). Correlations ranged from a low of .13 with Work Orientation to a high of .34 with Openness to Change. (The average correlation with the three individual adequacy subscales, [see Table 1] was .18, with the three Social Adequacy subscales, .29). The same respondents also reported their grade-point averages. Self-reports of average grades obtained in school likewise yielded significant but low levels of association with PSM scores, from a

low of .13 with Tolerance to a high of .29 with Work Orientation. There was little difference in the relationship of the Individual and Social Adequacy scales to reported grades. Actual grade-point averages were obtained for 101 tenth grade students in Oregon. GPA correlated significantly with all Psychosocial Maturity subscale scores (Form B). Values of r ranged from a low of .22 with Identity to a high of .42 with Work Orientation.[7]

Taken together, the evidence from these studies suggests the following: (a) The Psychosocial Maturity Inventory is not merely a measure of intellectual ability; (b) However, various measures of intellectual ability and performance are, as expected, moderately, positively, and in most cases significantly associated with psychosocial maturity scores; (c) Verbal achievement scores appear to be more highly correlated with psychosocial maturity than quantitative achievement scores, by grade 8; and (d) Different measures of verbal achievement across the school years produce a range of associations with the nine PSM scores, in no case, however, explaining more than 33% of the variance in any PSM subscale.

We turn now to studies of concurrent validity. In two studies (Josselson, et al., 1974a; in press) teachers' evaluations of traits expressive of psychosocial maturity (e.g., self-reliance, work-orientation) were related to youngsters' PSM scores. In the first of these studies, each of the nine psychosocial maturity subscales was translated into a single behavioral description. Seven hundred twenty-nine fifth graders (the South Carolina sample) were rated on a four-point scale labeled "very much like child," through "very much unlike child." No training of raters was carried

out. Before data analysis, subjects were pooled into three groups for each trait -- those rated "very much like" a psychosocially mature trait-description, those rated "very much unlike" the same, and those placed in the two middle categories. The mean PSM scores on Form B of children rated very much like a psychosocially mature trait were then compared with the mean PSM scores of all others; and subsequently, the mean PSM scores of children rated very much unlike a psychosocially mature trait were contrasted with the scores of children in the remaining groups. Students rated high on a trait scored significantly higher on the corresponding PSM subscale than all other students in every case except on the Trust subscale. Students rated low on a trait scored lower than all other students on the corresponding PSM subscale in only two of nine cases: the Change and Social Commitment subscales. Two interpretations of why the subscales are less sensitive to the relative lack of psychosocially mature traits than to their presence are offered in Josselson et al. (1974a).

The skewed character of the distribution of teacher ratings in the study just reported -- twice as many children were rated in the extreme high category as in the extreme low category -- suggested that future studies would benefit from imposing a fixed distribution on the raters. Consequently, in a later study of 192 11th graders, teachers were asked to name only the highest (most mature) and lowest (least mature) students on behavioral descriptions relevant to four PSM traits: Self-reliance, Work Orientation, Social Commitment, and Tolerance. The appropriate trait-related PSM scores on Form C of students nominated "high" by one or more of their teachers were compared with the scores of students not nominated; and the appropriate

subscale scores of students nominated "low" by one or more teachers were likewise compared with the scores of students not so nominated. The group of youngsters rated "high" by their teachers obtained significantly higher mean scores than the comparison group on three of the four PSM subscales. (The exception was Self-reliance.) The group of youngsters rated "low" obtained significantly lower scores than the comparison group on three of the four subscales. (The exception was Tolerance.)

Considering the difficulties inherent in studies that rely on teacher ratings of behavior, and the compression of meaning involved in reducing a complex trait to a one-line behavioral description, the two studies indicate that scores on the psychosocial maturity scales correspond moderately well to teachers' perceptions of students.

Psychosocial Maturity scores have also been studied in relation to measures of self-esteem, anxiety and neuroticism (Josselson et. al., 1975). The hypotheses of the study were that the three Individual Adequacy subscales would be positively and significantly associated with self-esteem, and negatively (and significantly) related to anxiety and neuroticism; and that the remaining scales, in contrast, would show comparatively weak associations with these measures. The two samples comprising this study were 68 freshmen enrolled in an experimental, early admissions college in Massachusetts, and 192 eleventh grade students in a small suburban Baltimore high school.[8]

The measures of self-esteem reported are the "TP" score from the Tennessee Self Concept scale and Rosenberg's (1965) self-esteem scale. The measure of neuroticism is the "N" scale from the Tennessee Self Concept

Scale. The measure of anxiety is Welsh's (1956) scale. Table 4 displays the obtained correlations between these measures and scores on the Psychosocial Maturity Inventory.

Table 4 About Here

Table 4 shows that both hypotheses are well supported: i.e., the relationship of scores on Self-reliance, Work Orientation and Identity to the three variables investigated are uniformly in the expected direction and generally significant, while the remaining PSM scores -- those presumably tapping Interpersonal and Social Adequacy rather than the adequacy of the individual in his own right -- typically have negligible and nonsignificant relationships with self-esteem, neuroticism and anxiety.[9] Thus, the data provide convincing evidence of construct validity for the Individual Adequacy scale and for the divergence or distinctiveness of this scale from the Social Adequacy and Interpersonal Adequacy scales.

Finally, Bond et al. (1974) examined the relationship of the three Social Adequacy subscales to students' participation in social action projects. A criterion group of college students was identified who displayed "real life" behavior attributes consistent with Social Commitment (see Table 1), -- and implicitly, attributes consistent with Tolerance and Openness to Socio-Political Change. These 71 students were involved in one of two volunteer programs sponsored by The Johns Hopkins University Chaplain's Office, both of which required a substantial investment of personal time and effort. (One program involved weekly one-to-one tutoring of inner city elementary school children; the other involved systematic study and fieldwork with individual juvenile delinquents.)

PSM scores of the volunteers were compared with those of a control group of 44 students at the same university who had never participated in social action projects. The volunteers scored higher on each of the three PSM subscales than the control group (t's for Social Commitment, Tolerance and Change were 3.91, 3.90 and 2.09, respectively, the former two significant at $p < .001$, the latter at $p < .05$). To determine the degree to which the group scores actually differed, Tilton's (1937) overlap statistic was computed. The computed O-values for the three scales, in the order just cited, indicated distribution overlap of 70%, 71% and 85%, respectively. Dunnette (1966) suggests that overlap percentages between 75% and 50% "may generally be taken as indicating moderately good relationships between a measure and a dichotomous behavior classification" (p. 147). The Social Commitment subscale, which was initially hypothesized to be most relevant to participation in social action projects, falls within the range specified by Dunnette, as does the Tolerance subscale.

3. The Structure of Psychosocial Maturity: Construct Validity

Table 5 indicates that the nine PSM subscales are, with one exception, significantly intercorrelated at all grade levels. This finding is consistent with the use of a unifying construct (psychosocial maturity) to describe the nine dimensions assessed. As in the case of subscale homogeniety (see Table 3), correlations among subscales increase with advancing grade level especially between grades 5 and 8.

Table 5 About Here

The question of the studies which follow was: do the empirical data lend support to the model of psychosocial maturity proposed in Table 1? That is, can we find evidence for three dimensions of psychosocial maturity --Individual Adequacy, Interpersonal Adequacy, and Social Adequacy -- each subsuming a specific set of three traits? The structure of the Psychosocial Maturity Inventory has been examined by means of an hierarchical factor analysis of the items and a principal components analysis of the nine subscale scores.

Hierarchical Factor Analysis. The items of the Psychosocial Maturity Inventory, Form B, were subjected to analysis by the Wherry-Wherry hierarchical factor analysis computer program.[10] This computer program applies a principal factor and minres (Harman and Jones, 1966) combination solution to decompose the zero order correlation matrix. Kaiser's (1958) varimax criterion is imposed in the factor rotation, and the varimax factors are further analyzed to produce an hierarchical factor solution. The eleventh grade data from the South Carolina sample were selected for factorization. A precise correspondence of the hierarchical solution to the theoretical model would yield one specific (first order) factor for each of the nine PSM subscales; additionally, the nine first order factors would combine, in the manner depicted by the model, into three higher order factors, each representing one of the three major categories of psychosocial maturity (Individual Adequacy, Interpersonal Adequacy and Social Adequacy). Details of the three analyses carried out, each allowing a different number of factors to emerge in the first order analysis, are reported in Greenberger et al. (1974).[11] An overview is given here of the structure obtained when the number of first order factors was left virtually unlimited, and factorization was terminated by the minimum residual criterion.

Briefly, the structure of the data best supported the Individual Adequacy and Social Adequacy scales of the theoretical model. The ideal structure was clearest in the factorial representation of the Social Adequacy scale for which both the three first order subscale factors (Social Commitment, Tolerance and Change), and a higher order Social Adequacy factor subsuming items from these subscales, were obtained. The Communication subscale, however, also contributed substantially to the factor variance. For the Individual Adequacy factor, there were no first order factors reflecting the separate subscales (Self-reliance, Work Orientation and Identity), but a higher order factor emerged which was comprised chiefly of items from these three subscales and, once again, the Communication subscale. The "migration" of the Communication items into the Individual Adequacy scale could well have been anticipated from the high correlation of the Communication subscale with the three Individual Adequacy subscales (Table 5) and from the common pattern of relationships to measures of self esteem, neuroticism, and anxiety exhibited by the Communication Skills subscale and Individual Adequacy scales.

The Interpersonal Adequacy category was least well represented in this analysis. The fate of the Communication Skills subscale has just been described. The Roles subscale did not have a recognizable specific factor nor did it have a strong influence on any higher order factor. The Trust subscale was represented by a specific factor and was related to a higher order factor which portrayed an amalgam of Interpersonal and Social Adequacy (i.e., the major variance of this factor was contributed by the three subscales in the former category and by two subscales in the latter).

Principal Components Analysis. PSM subscale scores (not item scores, as in the hierarchical analysis) were subjected to a principal components analysis on two sets of data: the South Carolina sample, grade 11, Form B of the Psychosocial Maturity Inventory; and the Pennsylvania sample, Form D of the Inventory. In both analyses a two-factor solution was obtained and subsequently rotated by the Varimax procedure. In the South Carolina data, the first factor was defined by the three Individual Adequacy subscales, Self Reliance, Work Orientation and Identity, with loadings between .66 and .84; additionally, the Communication subscale made a strong appearance (.81) on Factor 1. The second factor was most clearly defined by the Social Adequacy subscales: Social Commitment, Tolerance and Change, each with loadings of .75 or more on the factor. The Roles subscale also showed a substantial loading (.73) on Factor 2. The Pennsylvania data, which are based on the short scales, yielded a highly similar factor structure. Factor 1, the Individual Adequacy factor, was best represented by the three Individual Adequacy subscales (loadings between .55 and .86); additionally, the Communication subscale again loaded on this factor (.67), as did Trust (.54). The second factor, Social Adequacy, was clearly defined by the three subscales denoted in the model, with loadings between .62 and .68. Additionally, the Roles subscale again emerged (.59) on Factor 2.

Comparison and Implications. All three factor analyses lend most support to the distinctiveness and integrity of the Individual and Social Adequacy categories, as defined in Table 1. None of the analyses was able to identify a clearcut Interpersonal Adequacy factor. It appears that the subscales in this category are saturated with both Individual and Social Adequacy components. Whether this overlap represents a flaw in the scales

(i.e., in the operationalization of the Interpersonal Adequacy construct) or reveals accurately the complex of traits that comprise interpersonal competence needs to be determined through furture research.

A major purpose of these investigations of the structure of the Psychosocial Maturity Inventory was to determine whether there was justification for grouping the nine individual subscale scores into composite scores reflecting the more general dimensions of the model. The factor analyses tell us that a composite score for Interpersonal Adequacy cannot be formed from the three subscales composing the theoretical subset, because these subscales do not cohere. The results of these analyses also indicate, however, that the subscales composing the theoretical subsets of Individual and Social Adequacy do cohere, and summary scores can justifiably be formed.

Although the factor structure of the Inventory yields somewhat more complex versions of the Individual and Social Adequacy dimensions than the model, our interest is in forming summary scores which serve as indicators of the theoretical constructs of Individual and Social Adequacy. Hence, in accordance with the model, each summary score is derived from a simple addition of scores based on the three subscales representing Individual and Social Adequacy, respectively. Such scores have now been assigned to subjects in the studies reported earlier. Individual and Social Adequacy summary scores correlate on the order of .44 to .60 for various samples; increase significantly between grades 5 and 8 and between grades 8 and 11; and, necessarily, produce correlations with other variables that reflect in magnitude the relationships previously cited for their component subscales.

Discussion

The educational community has expressed growing interest over the past several years in the assessment of children's personal and social development. The construction of the Psychosocial Maturity Inventory is pertinent to this objective. A strength of the inventory is its derivation from an explicit model of maturity which integrates desired end-products of socialization with goals of human development.

Various forms of the Inventory have been devised in order to accomodate different research needs. The "long" form, Form B, is the standard version of the instrument, but good approximations to Form B which require less administration time have also been developed. Because Form B is suitable for all grade levels from fifth through twelfth, and Forms C and D are close approximations to the standard version, the Inventory can be used to document the course of psychosocial development over the school years and to study youngsters of different ages using essentially the same measures.[12]

With a few exceptions, the nine subscales of the Psychosocial Maturity Inventory have adequate internal consistency at all grade levels in the range cited above. The degree of homogeniety within scales makes them appropriate for use in studying (or comparing) groups of individuals, but not for analysis or diagnosis at the level of the single individual. Validity evidence to date is promising, particularly concerning the subscales representing Individual and Social Adequacy.

A theoretical structure of a model of psychosocial maturity was discussed in an earlier paper (Greenberger and Sørensen, 1974) and outlined in Table 1. This model has been empirically tested in the studies described in this paper. At the most general level, evidence from the intercorrelations among the nine subscales and from the factor analyses of items and scales supports the use of the unifying construct of Psychosocial Maturity to describe the nine attributes that the subscales assess. At the same time, evidence from both the validity studies and the factor analyses supports the distinctiveness and meaningfulness of the Individual and Social Adequacy dimensions of the model.[13]

Footnotes

1. A number of tests were examined for ideas and some items were adapted for use in the inventory. In addition, many tests form part of this author's apperceptive mass and undoubtedly influenced her inventions.

2. Further details concerning this sample may be found in Greenberger et al, (1974).

3. This measure entails fewer assumptions than the more commonly used formulae 20 and 21. Specifically, KR 8 assumes only that the item intercorrelation matrix has a rank of one, i.e., that the subscale measures only one factor, while KR 20 and KR 21 assume in addition that all item intercorrelations and standard deviations are equal. (If these additional assumptions are met, KR 8 and KR 20 will produce identical reliability estimates. If they are not met, KR 8 will produce higher reliability estimates than KR 20.)

4. Forms B and C of this subscale contain items reflecting both "enlightened trust" -- sensitivity to factors that limit people's trustworthiness -- and "rational dependence" -- willingness to accept help from others when necessary. The Form D Trust subscale contains only items reflecting enlightened trust.

5. The two exceptions were on the Work Orientation subscale. The mean scores on this subscale did not increase significantly between grades 8 and 11 on Form B and between grades 5 and 8 on Form C. This finding is as likely to reveal a reality of adolescent development as a flaw in the Work subscale.

6. These questions also arise because the Inventory is a complex verbal stimulus, reponses to which require that the child read and understand the meaning of the items.

7. We are grateful to Dr. Thomas Owens, Northwest Regional Laboratories, for sharing these data with us.

8. We are grateful to Dr. Nancy Goldberger, Simon's Rock College, for sharing these data with us.

9. There are a few exceptions to the finding that subscales other than those in the Individual Adequacy scale have "negligible" relationships to self-esteem, neuroticism and anxiety. Most notably, Table 4 reveals that Communication Skills functions much like an Individual Adequacy subscale.

10. This program is available from the Ohio State University Department of Psychology computer program library.

11. The high degree of correlation among the subscales prevented the emergence of nine first order factors, as specified in the first analysis, and yielded a factor structure which could not be interpreted readily. Since this "failed" analysis suggested that fewer dimensions existed, the second analysis specified six first order factors. The resulting factor structure was no more interpretable than the first.

12. Among the investigations now underway in which the Inventory is being used are a large-scale survey examining peer, family and school influences on psychosocial maturity and a clinical study of "high mature" and "low mature" adolescents.

13. The Appendices contain a number of tables that document in further detail the properties of the Psychosocial Maturity Inventory.

References

Andersson, B-E. Studies in adolescent behaviour. Uppsala: Almqvist & Wiksells, 1969.

Bond, L., Josselson, R., Greenberger, E. & McConochie, D. On the validity of the Psychosocial Maturity Inventory: the social adequacy subscales and social action. Baltimore: Report No. 177, Center for Social Organization of Schools, The Johns Hopkins University, 1974.

Coleman, J.S. The adolescent society. New York: The Free Press, 1961.

Dunnette, M.D. Personnel selection and placement.

Greenberger, E. Psychosocial maturity or social desirability. Baltimore: Report No. 131, Center for Social Organization of Schools, The Johns Hopkins University, 1972.

Greenberger, E., Knerr, C., Knerr, B. & Brown, J. B. The measurement and structure of psychosocial maturity. Baltimore: Report No. 170, Center for Social Organization of Schools, The Johns Hopkins University, 1974.

Greenberger, E. & Sørensen, Aa. B. Towards a concept of psychosocial maturity. Journal of Youth and Adolescence, 1974, 3, 229-258.

Harman, H.H. & Jones, W. H. Factor analysis by minimizing residuals (menres). Psychometrika, 1966, 31, 351-368.

Jacob, P. Changing values in college: an exploratory study of the impact of college teaching. New York: Harper, 1958.

Josselson, R., Greenberger, E. & McConochie, D. On the validity of the psychosocial maturity scales: relationship to teacher ratings. Baltimore: Report No. 171, Center for Social Organization of Schools, The Johns Hopkins University, 1974(a).

Josselson, R., Greenberger, E. & McConochie, D. On the validity of the Psychosocial Maturity Inventory: Relationship to teacher nominations. Baltimore: Center for Social Organization of Schools, The Johns Hopkins University, in press.

Josselson, R., Greenberger, E. & McConochie, D. On the validity of the Psychosocial Maturity Inventory: Relationship to measures of personal well-being. Baltimore: Center for Social Organization of Schools, The Johns Hopkins University, 1975.

Kaiser, H. F. The varimax criterion for analytic rotation in factor analyses. Psychometrika, 1958, 23, 187-200.

Kandel, D. B. & Lesser, G. S. Youth in two worlds. San Francisco: Jossey-Bass, 1972.

Kuder, G. F. & Richardson, M.W. The theory of the estimation of test reliability. Psychometrika, 1937, 2, 151-160.

Lacey, C. Hightown Grammar: the school as a social system. Manchester, England: The University Press, 1970.

McDill, E. & Coleman, J. S. Family and peer influences on college plans of high school students. Sociology of Education, 1965, 38, 112-126.

Newcomb, T. Personality and social change. New York: Holt, Rinehart and Winston, 1943.

Rosenberg, M. Society and the adolescent self-image. Princeton: Princeton University Press, 1965.

Sanford, R. N. (Ed.). The American college. New York: Wiley, 1962.

Tilton, J. W. The measurement of overlapping. Journal of Educational Psychology, 1937 28, 656-662.

Welsh, G. S. Factor dimensions A and R. In G. S. Welsh and W. G. Dahlstrom (Eds.), Basic readings on the MMPI in psychology and medicine. Minneapolis: University of Minnesota Press, 1956.

Table 1

Detailed Model of Psychosocial Maturity[a]

Individual Adequacy

- Self-Reliance
  - absence of excessive need for social validation
  - sense of control
  - initiative
- Work Orientation
  - general work skills
  - standards of competence
  - pleasure in work
- Identity
  - clarity of self-concept
  - consideration of life goals
  - self-esteem
  - internalized values

Interpersonal Adequacy

- Communication Skills
  - ability to encode messages
  - ability to decode messages
  - empathy
- Enlightened Trust
  - rational dependence
  - rejection of simplistic views of human nature
  - awareness of constraints on trustworthiness
- Knowledge of Major Roles
  - role-appropriate behavior
  - management of role conflict

Social Adequacy

- Social Commitment
  - feelings of community
  - willingness to modify personal goals in favor of social goals
  - readiness to form alliances
  - interest in long-term social goals
- Openness to Socio-political Change
  - general openness to change
  - recognition of costs of status quo
  - recognition of costs of change
- Tolerance of Individual and Cultural Differences
  - willingness to interact with people who differ from the norm
  - sensitivity to the rights of people who differ from the norm
  - awareness of costs and benefits of tolerance

[a]Reprinted from Greenberger et.al. (1974).

Table 2

Sample Items from Psychosocial Maturity Inventory[a]

Subscale	Item
Self-Reliance	You are probably wrong if your friends are against what you decide. (-)
	Someone often has to tell me what to do. (-)
Work Orientation	I believe in working only as hard as I have to. (-)
	If something more interesting comes along, I will usually stop anything I'm doing. (-)
Identity	I change the way I feel and act so often that I sometimes wonder who the "real" me is. (-)
	I have to struggle to keep my behavior what it ought to be. (-)
Communication Skills	People find it hard to figure me out from what I say. (-)
	In a discussion, I often find it hard to understand what people are trying to say. (-)
Roles	Teachers should not expect as much homework from athletes who have to spend a lot of time at practice. (-)
	If you're upset with someone at home, you can't be expected to be nice to people at school. (-)
Enlightened Trust	If people are picked in a fair way to be on a trial jury, they are sure to reach a fair decision. (-)
	I find it hard to ask even my good friends for help. (-)
Social Commitment	It's not really my problem if my neighbors are in trouble and need help. (-)
	Why work for something others will enjoy if you won't be alive to enjoy it too? (-)
Tolerance	If I had a choice, I would prefer a blood transfusion from a person of the same skin color as mine. (-)
	I feel a little sorry for people whose ideas about God are different from mine. (-)
Openness To Change	If everyone is to be really equal, some people will have fewer advantages than they have now. (+)
	Women should not be elected to top government positions. (-)

[a] A minus sign following an item indicates that the "mature" response lies in the direction of disagreement; a plus sign indicates that the "mature" response lies in the direction of agreement with the item.

Table 3

Kuder-Richardson 8 Estimates of Internal Consistency for the Nine Subscales of the Psychosocial Maturity Inventory: Forms B, C and D

PSM Scale	Form	S.C. Sample[a] grade 5 (n=729)	S.C. Sample grade 8 (n=925)	S.C. Sample grade 11 (n=637)	S.C. Sample[b] grade 6 (n=438)	S.C. Sample grade 9 (n=546)	Penna Sample[c] grade 11 (n=2,605)
Self-Reliance	B	.73	.78	.82	.75	.79	-
	C	.71	.76	.79	.69	.78	-
	D	-	-	-	-	-	.82
Work Orientation	B	.74	.81	.81	.79	.82	-
	C	.71	.76	.79	.71	.80	-
	D	-	-	-	-	-	.81
Identity	B	.78	.83	.85	.78	.85	-
	C	.78	.81	.83	.77	.80	-
	D	-	-	-	-	-	.85
Communication Skills	B	.62	.75	.80	.68	.80	-
	C	.72	.79	.78	.73	.76	-
	D	-	-	-	-	-	.75
Roles	B	.73	.78	.76	.76	.78	-
	C	.73	.78	.77	.76	.77	-
	D	-	-	-	-	-	.82
Enlightened Trust	B	.66	.71	.75	.68	.68	-
	C	.67	.66	.72	.65	.65	-
	D	-	-	-	-	-	.74
Social Commitment	B	.72	.83	.82	.79	.82	-
	C	.73	.81	.81	.76	.77	-
	D	-	-	-	-	-	.86
Tolerance	B	.62	.76	.78	.69	.80	-
	C	.65	.72	.75	.67	.75	-
	D	-	-	-	-	-	.84
Openness to Change	B	.58	.70	.72	.63	.75	-
	C	.61	.67	.71	.65	.74	-
	D	-	-	-	-	-	.82

[a] Test construction sample for Forms B and C, South Carolina

[b] Re-test of South Carolina students one year later

[c] All eleventh graders in 11 Pennsylvania schools

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Table 4

Correlations of Self-esteem, Neuroticism and Anxiety with PSM scores.[a]

	Self-esteem (n=68)[b] [Tennessee Self-Concept Scale "TP"]	Self-esteem (n=192)[c] [Rosenberg]	Neuroticism (n=68)[b] [Tennessee Self-Concept Scale "N"]	Anxiety (n=192)[c] [Welsh Anxiety Scale]
Self-reliance	.22*	.29***	-.21*	-.24**
Work Orientation	.36**	.22**	-.38**	-.32***
Identity	.50***	.53***	-.52***	-.40***
Communication Skills	.30*	.38***	-.29*	-.18*
Roles	.15	.08	-.21*	-.01
Enlightened Trust	.10	.29***	-.13	.04
Social Commitment	.07	-.05	-.08	-.03
Tolerance	.09	.10	-.08	.05
Openness to Change	.06	.19*	-.06	-.02

[a] All scales have been scored so that a high score means a high level of the disposition assessed by the scale.

[b] These data came from the Simon's Rock College sample, who took Form B of the Psychosocial Maturity Inventory.

[c] These data came from the Baltimore suburban high school sample, who took Form C of the Psychosocial Maturity Inventory.

* = $p < .05$
** = $p < .01$
*** = $p < .001$

Table 5

Intercorrelations Among PSM Subscales (Form B) at Three Grade Levels: South Carolina Sample [a, b]

	Self-Reliance	Work Orientation	Identity	Communication Skills	Roles	Enlightened Trust	Social Commitment	Tolerance	Openness to Change
Self-Reliance		.51 .62 .59	.64 .71 .71	.26 .50 .52	.54 .64 .63	.60 .54 .58	.42 .56 .51	.34 .50 .54	.24 .45 .44
Work Orientation			.61 .66 .67	.32 .53 .53	.55 .57 .52	.35 .35 .36	.50 .57 .51	.39 .43 .38	.30 .34 .32
Identity				.42 .61 .61	.49 .52 .54	.44 .44 .46	.40 .45 .46	.30 .39 .43	.27 .36 .33
Communication Skills					.11 .23 .25	.06[b] .17 .20	.17 .30 .33	.09 .30 .38	.17 .26 .33
Roles						.51 .54 .54	.46 .64 .61	.38 .50 .50	.27 .45 .45
Enlightened Trust							.28 .37 .35	.15 .31 .36	.11 .27 .31
Social Commitment								.53 .64 .58	.41 .54 .51
Tolerance									.44 .57 .58
Openness to Change									

[a] The first line of figures in each cell is for grade 5 (n = 729); the second line of figures, grade 8 (n = 925); the third line of figures, grade 11 (n = 639).

[b] All correlations are significant at or beyond the 5% level unless marked by superscript "b".

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A - Subscale Homogeneity for Form D of the Psychosocial Maturity Inventory

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Appendix A

Subscale Homogeniety for Form D of the

Psychosocial Maturity Inventory

Table A-1

KR 8 Estimate of Subscale Homogeniety for Form D:

Pennsylvania 10th Graders[a]

Subscale	KR 8 Grade 10 (n ≅ 2000)
Self-Reliance	.77
Work Orientation	.79
Identity	.83
Communication Skills	.72
Roles	.75
Enlightened Trust	.59
Social Commitment	.82
Tolerance	.79
Openness to Change	.77

[a]This sample took the grade 11 version of Form D. (There are grade 5, 8, and 11 versions of this form.) Table 3 of this Report gives KR 8's for an 11th grade sample that took Form D.

Appendix B

Correlation of Form B with Form C PSM Subscales for Various Samples and Age Levels

Table B-1

Correlation of Form B (Long) and Form C (Short) PSM Subscales

	South Carolina Grade 5 (n = 729)	South Carolina Grade 6 (n = 438)	South Carolina Grade 8 (n = 925)	South Carolina Grade 9 (n = 546)	South Carolina Grade 11 (n = 637)	South Carolina Grade 12 (n = 338)	Oregon Grades 11 & 12 (n = 221)	Simon's Rock College (n = 68)
Self-Reliance	.88	.84	.92	.91	.93	.92	.93	.94
Work Orientation	.92	.90	.91	.92	.92	.93	.92	.96
Identity	.88	.91	.93	.93	.94	.94	.92	.97
Communication Skills	.75	.80	.82	.88	.88	.92	.90	.94
Roles	.89	.88	.90	.89	.90	.91	.92	.92
Enlightened Trust	.83	.84	.87	.85	.90	.87	.88	.94
Social Commitment	.86	.91	.91	.89	.91	.90	.91	.95
Tolerance	.85	.85	.86	.88	.90	.91	.92	.96
Openness to Change	.85	.79	.86	.89	.91	.93	.92	.94
Individual Adequacy Summary score	.95	.90	.97	.96	.97	.97	.96	.89
Social Adequacy Summary score	.92	.85	.94	.95	.96	.96	.96	.92

Appendix C

Mean Item Scores on Form B and C PSM Subscales

at Three Grade Levels

Table C-1

Means & Standard Deviation of Form B (Long) PSM

Subscales at Three Grade Levels: South Carolina Sample

Subscale	Grade	Mean	S.D.	Grades Compared	t	p≤
Self-Reliance	5	2.37	.42	5 vs 11	16.38	.001
	8	2.66	.42	5 vs 8	14.09	.001
	11	2.75	.44	8 vs 11	4.08	.001
Work Orientation	5	2.53	.42	5 vs 11	5.59	.001
	8	2.61	.45	5 vs 8	3.68	.001
	11	2.66	.44	8 vs 11	2.18	.05
Identity	5	2.50	.45	5 vs 11	10.60	.001
	8	2.69	.47	5 vs 8	8.32	.001
	11	2.77	.49	8 vs 11	3.17	.001
Communication Skills	5	2.55	.33	5 vs 11	7.53	.001
	8	2.65	.36	5 vs 8	5.82	.001
	11	2.70	.40	8 vs 11	2.58	.01
Roles	5	2.47	.44	5 vs 11	15.14	.001
	8	2.70	.45	5 vs 8	10.42	.001
	11	2.82	.42	8 vs 11	5.32	.001
Enlightened Trust	5	2.26	.35	5 vs 11	12.22	.001
	8	2.43	.37	5 vs 8	9.50	.001
	11	2.51	.39	8 vs 11	4.12	.001
Social Commitment	5	2.64	.40	5 vs 11	12.15	.001
	8	2.81	.46	5 vs 8	7.90	.001
	11	2.91	.42	8 vs 11	4.76	.001
Tolerance	5	2.64	.40	5 vs 11	12.49	.001
	8	2.77	.38	5 vs 8	6.91	.001
	11	2.88	.33	8 vs 11	5.62	.001
Openness to Change	5	2.65	.33	5 vs 11	14.04	.001
	8	2.84	.37	5 vs 8	0.87	.001
	11	2.92	.38	8 vs 11	4.15	.001

[a]Figures are means and standard deviations of the item scores for each subscale.

[b]N's are 728, 921 and 637 at grades 5, 8, and 11, respectively.

Table C-2

Means & Standard Deviation of Form C (Short) PSM

Subscales at three Grade Levels: South Carolina Sample [a,b]

Subscale	Grade	Mean	S.D.	Grades Compared	t	p≤
Self-Reliance	5	2.35	.50	5 vs 11	25.00	.001
	8	2.77	.52	5 vs 8	23.33	.001
	11	2.85	.53	8 vs 11	4.21	.001
Work Orientation	5	2.53	.53	5 vs 11	2.00	.05
	8	2.51	.53	5 vs 8	1.11	NS
	11	2.57	.53	8 vs 11	3.16	.05
Identity	5	2.50	.58	5 vs 11	11.82	.001
	8	2.82	.58	5 vs 8	16.00	.001
	11	2.76	.59	8 vs 11	2.86	.001
Communication Skills	5	2.47	.51	5 vs 11	8.00	.001
	8	2.52	.53	5 vs 8	2.78	.001
	11	2.63	.52	8 vs 11	5.79	.001
Roles	5	2.61	.56	5 vs 11	23.00	.001
	8	2.89	.57	5 vs 8	14.00	.001
	11	3.07	.51	8 vs 11	9.47	.001
Enlightened Trust	5	2.39	.48	5 vs 11	8.00	.001
	8	2.45	.46	5 vs 8	10.00	.001
	11	2.55	.51	8 vs 11	5.88	.001
Social Commitment	5	2.55	.55	5 vs 11	17.14	.001
	8	2.77	.58	5 vs 8	11.00	.001
	11	2.91	.56	8 vs 11	7.00	.001
Tolerance	5	2.79	.48	5 vs 11	8.89	.001
	8	2.85	.51	5 vs 8	3.53	.001
	11	2.95	.48	8 vs 11	4.48	.001
Openness to Change	5	2.66	.48	5 vs 11	14.44	.001
	8	2.79	.51	5 vs 8	7.65	.001
	11	2.92	.49	8 vs 11	7.22	.001

[a] N's are 728, 921, and 637 at grades 5, 8, and 11 respectively.

[b] Figures are means and standard deviations of the items.

Appendix D

Correlations of Form B and Form C PSM Subscales with Social Desirability

Table D-1

Correlations of PSM Subscales with Social Desirability

	Social Desirability							
	South Carolina[a]						Oregon[b]	
	Grade 5 (n = 728)		Grade 8 (n = 921)		Grade 11 (n = 637)		Grade 11 (n = 225)	(n = 221)
	Form B	Form C	Form B	Form C	Form B	Form C	Form B	Form C
Self-Reliance	-.05	-.08	-.03	-.07	-.10	-.11	-.03	.16
Work Orientation	.21	.18	.26	.31	.25	.27	.27	.26
Identity	.08	.05	.11	.02	.13	.07	.05	.04
Communication Skills	.22	.17	.21	.18	.16	.15	.06	.11
Roles	-.06	-.05	-.08	-.12	-.14	-.15	.01	.08
Enlightened Trust	-.12	-.15	-.15	-.22	-.30	-.33	-.19	-.02
Social Commitment	-.05	-.06	-.01	-.07	-.07	-.10	.08	.14
Tolerance	-.05	-.05	-.03	.01	-.07	-.02	.00	.14
Openness to Change	-.14	-.13	-.19	-.12	-.25	-.21	-.10	.06
Individual Adequacy Summary score	.09	.06	.13	.10	.11	.09	--	--
Social Adequacy Summary score	-.10	-.10	-.08	-.07	-.13	-.13	--	--

[a] Form B was administered to all Ss. Form C scores were extracted from the longer form of the scales.

[b] Form B was administered near the beginning of the school year; Form C was administered six months later.

Appendix E

Correlation of PSM Subscale Scores with Various Measures of Academic Achievement

Table E-1

Correlations of Reading and Arithmetic Achievement Test Scores

with Form B Subscale Scores: South Carolina Sample

	Self Reliance	Work Orientation	Identity	Communication Skills	Roles	Enlightened Trust	Social Commitment	Tolerance	Change
Iowa Test of Basic Skills 153 5th graders									
Reading Total	.18*	.23**	.21**	.07	.18*	.12	.31***	.23**	.32*
Arith. Total	.17*	.31***	.28**	.18*	.21**	.11	.30**	.21**	.31**
Iowa Test of Basic Skills 281 8th graders									
Reading Total	.34***	.16***	.26***	.14**	.35***	.36***	.30***	.31***	.38***
Arith. Total	.15**	.02	.10*	.01	.20***	.19***	.11*	.06	.14**
California Test of Basic Skills 305 8th graders									
Reading Total	.55***	.47***	.53***	.38***	.53***	.39***	.48***	.40***	.57***
Arith.Total	.26***	.28***	.24***	.20***	.28***	.16**	.22***	.18**	.26***

*p <.05
**p <.01
***p <.001

Table E-2

Correlation of Form D (Short) PSM Subscales with Verbal "Level of Previous Learning"[a]: Pennsylvania 11th Grade Sample[b]

Subscale	r
Self-Reliance	.24
Work Orientation	.13
Identity	.16
Communication Skills	.15
Roles	.25
Enlightened Trust	.26
Social Commitment	.29
Tolerance	.24
Openness to Change	.34

[a]This test, described in the text, has been shown in other studies at this grade level to correlate on the order of .92 with a composite of standardized achievement test scores.

[b]$N \cong 2{,}070$

Table E-3

Correlation of PSM Subscales with Grades

Subscale	Form B: Actual Grade Point Average[a] (n = 101)	Form D: Reported Grade Point Average[b] (n = 2,070)
Self-Reliance	.30	.24
Work Orientation	.42	.29
Identity	.22	.20
Communication Skills	.31	.16
Roles	.25	.20
Enlightened Trust	.27	.22
Social Commitment	.32	.25
Tolerance	.23	.13
Openness to Change	.33	.22

[a] Oregon 10th graders.

[b] Pennsylvania 11th graders.

Appendix F

Correlations Among Subscales for Forms B, C & D

of the Psychosocial Maturity Inventory

Table F-1

Correlations Among Form B (Long) PSM Subscales: South Carolina Sample[a,b]

	Self Reliance	Work Orientation	Identity	Communication Skills	Roles	Enlightened Trust	Social Commitment	Tolerance	Change
Self Reliance		.51 .62 .59	.64 .71 .71	.26 .50 .52	.54 .64 .63	.60 .54 .58	.42 .56 .51	.34 .50 .54	.24 .45 .44
Work Orientation			.61 .66 .67	.32 .53 .53	.55 .57 .52	.35 .35 .36	.50 .57 .51	.39 .43 .38	.30 .34 .32
Identity				.42 .61 .61	.49 .52 .54	.44 .44 .46	.40 .45 .46	.30 .39 .43	.27 .36 .33
Communication Skills					.11 .23 .25	.06[b] .17 .20	.17 .30 .33	.09 .30 .38	.17 .26 .33
Roles						.51 .54 .54	.46 .64 .61	.38 .50 .50	.27 .45 .45
Enlightened Trust							.28 .37 .35	.15 .31 .36	.11 .27 .31
Social Commitment								.53 .64 .58	.41 .54 .51
Tolerance									.44 .57 .58
Openness to Change									

[a]The first line of figures in each cell is for grade 5 (n = 729); the second line of figures, grade 8 (n = 925); the third line of figures, grade 11 (n = 639).

[b]All correlations are significant at or beyond the 5% level unless marked by superscript "b".

Table F-2

Correlations Among Form C (Short) PSM Subscales: South Carolina Sample[a,b]

	Grade Level	Self Reliance	Work Orientation	Identity	Communication Skills	Roles	Enlightened Trust	Social Commitment	Tolerance	Change
SR	5,6		.42, .44	.48, .44	.49, .54	.47, .54	.55, .43	.45, .46	.25, .29	.29, .43
	8,9		.47, .47	.55, .51	.63, .60	.62, .60	.45, .44	.64, .61	.48, .44	.48, .53
	11,12		.52, .63	.56, .60	.64, .64	.57, .50	.47, .40	.53, .54	.51, .50	.45, .46
W	5,6			.49, .55	.54, .57	.50, .49	.37, .32	.46, .42	.34, .27	.33, .26
	8,9			.52, .57	.52, .55	.40, .40	.19, .18	.45, .42	.35, .24	.27, .29
	11,12			.60, .57	.55, .60	.42, .40	.25, .28	.44, .54	.31, .33	.26, .35
C	5,6				.60, .58	.38, .39	.37, .29	.30, .37	.22, .19	.24, .22
	8,9				.64, .61	.32, .31	.29, .22	.38, .36	.27, .23	.26, .31
	11,12				.63, .61	.32, .29	.27, .27	.33, .37	.37, .38	.31, .33
ID	5,6					.47, .51	.45, .39	.40, .42	.30, .21	.32, .30
	8,9					.51, .45	.36, .31	.53, .48	.40, .30	.39, .33
	11,12					.48, .42	.39, .32	.47, .46	.35, .28	.32, .26
R	5,6						.50, .44	.56, .61	.41, .37	.38, .46
	8,9						.39, .43	.66, .64	.48, .44	.46, .54
	11,12						.46, .41	.65, .63	.45, .37	.46, .51
TR	5,6							.45, .40	.17, .23	.29, .29
	8,9							.41, .31	.18, .15	.32, .29
	11,12							.48, .47	.28, .24	.36, .35
SC	5,6								.44, .47	.40, .47
	8,9								.53, .50	.50, .54
	11,12								.49, .47	.50, .55
TOL	5,6									.39, .47
	8,9									.46, .48
	11,12									.46, .56
CH	5,6									
	8,9									
	11,12									

[a] The original 5th, 8th and 11th grade samples were retested the following year. N's were given in Table F-1

[b] All correlations are significant at or beyond the 5% level.

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Table F-3

Correlations Among Form B (Long) PSM Subscales: Oregon Sample[a,b]

	Self Reliance	Work Orientation	Identity	Communication Skills	Roles	Enlightened Trust	Social Commitment	Tolerance	Change
Self Reliance		.67	.77	.54	.58	.62	.56	.63	.58
Work Orientation			.71	.54	.52	.50	.47	.48	.37
Identity				.58	.50	.51	.47	.48	.45
Communication Skills					.26	.31	.32	.27	.35
Roles						.65	.60	.61	.57
Enlightened Trust							.40	.48	.44
Social Commitment								.72	.59
Tolerance									.71
Openness to Change									

[a]The sample consists of 225 11th and 12th graders

[b]All correlations are significant at or beyond the 5% level.

Table F-4

Correlations Among Form D (Short) PSM Subscales: Pennsylvania Sample[a,b]

	Self Reliance	Work Orientation	Identity	Communication Skills	Roles	Enlightened Trust	Social Commitment	Tolerance	Change
Self Reliance		.48	.58	.52	.46	.38	.45	.38	.36
Work Orientation			.46	.43	.32	.29	.40	.23	.17
Identity				.57	.30	.54	.33	.22	.19
Communication Skills					.24	.40	.32	.26	.21
Roles						.26	.52	.38	.38
Enlightened Trust							.39	.31	.27
Social Commitment								.53	.45
Tolerance									.49
Openness to Change									

[a]The sample consists of approximatelv 2,600 11th graders

[b]All correlations are significant at or beyond the 5% level.

Appendix G

Principal Components Analysis of Form B and D

of the Psychosocial Maturity Inventory

Table G-1

Principal Components Analysis of Psychosocial Maturity Inventory

	South Carolina Grade 11 (Form B) n = 637		Pennsylvania Grade 11 (Form D) n = 2,449	
	Factor 1[a]	Factor 2[b]	Factor 1[a]	Factor 2[b]
Self-Reliance	.665	.547	.647	.396
Work Orientation	.771	.314	.554	.213
Identity	.839	.321	.856	.066
Communication Skills	.810	.108	.674	.141
Roles	.347	.733	.290	.589
Enlightened Trust	.331	.553	.544	.222
Social Commitment	.281	.752	.353	.678
Tolerance	.230	.766	.224	.630
Openness to Change	.099	.773	.172	.615

[a]Individual Adequacy factor

[b]Social Adequacy factor.

Appendix H

Tables Concerning the Individual Adequacy and

Social Adequacy Summary Scales

Table H-1

Correlations of Summary Scores with Other Variables

Summary Scores	Self-esteem[a] (Rosenberg)	Anxiety[a] (Welsh)	Self-esteem[b] (Tennessee)	Neuroticism[b] (Tennessee)	Reported[c] Grade Average	LPL[c] (verbal achievement test)
Individual Adequacy	.44	-.41	.41	-.42	.30	.22
Social Adequacy	.20	-.002	.08	-.09	.25	.36

[a] 192 11th graders, Baltimore

[b] 68 freshmen, Simon's Rock College

[c] 2400 11th graders, Pennsylvania.

Table H-2

Mean and Standard Deviation of Form B Summary Scores at Three Grade Levels[a]

	mean	s.d.	n	Grades Compared	t	p
Individual Adequacy						
Grade 5	7.35	1.36	730	5 vs 11	18.86	<.001
Grade 8	8.08	1.35	903	5 vs 8	16.59	<.001
Grade 11	8.18	1.39	637	8 vs 11	2.27	<.01
Social Adequacy						
Grade 5	7.98	1.24	730	5 vs 11	18.18	<.001
Grade 8	8.40	1.30	903	5 vs 8	2.43	<.01
Grade 11	8.78	1.24	637	8 vs 11	8.64	<.001

[a]South Carolina sample

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Table H-3

Mean and Standard Deviation of Form C Summary Scores at Three Grade Levels[a]

	Mean	s.d.	n	Grades Compared	t	p
Individual Adequacy						
Grade 5	7.36	1.33	729	5 vs 11	11.23	<.001
Grade 8	8.08	1.38	922	5 vs 8	10.86	<.001
Grade 11	8.18	1.39	637	8 vs 11	1.41	<.05 p <.1
Social Adequacy						
Grade 5	7.99	1.21	729	5 vs 11	11.97	<.001
Grade 8	8.40	1.33	922	5 vs 8	6.61	<.001
Grade 11	8.78	1.24	637	8 vs 11	5.76	<.001

[a]South Carolina sample

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Table H-4

Mean and Standard Deviation of Form D Summary Scores

at Two Grade Levels

	Individual Adequacy			Social Adequacy		
	mean	s.d.	n	mean	s.d.	n
Pennsylvania Grade 10	8.90	1.25	2,000	9.33	1.18	1,999
Pennsylvania Grade 11	9.06	1.23	2,584	9.35	1.17	2,572

Table H-5

Correlation of Individual and Social Adequacy Summary Scores[a]

	Form B	Form C	Form D
South Carolina Samples			
Grade 5 (n = 729)	.56	.58	-
Grade 6 (n = 438)	.53	-	-
Grade 8 (n = 925)	.63	.67	-
Grade 9 (n = 546)	.59	-	-
Grade 11 (n = 637)	.59	.60	-
Grade 12 (n = 338)	.57	-	-
Other Samples			
Pennsylvania Grade 10 (n = 1,999)	-	-	.42
Pennsylvania Grade 11 (n = 2,056)	-	-	.43
Simon's Rock College (n = 68)	.26	.27	-

Table H-6

Mean and Standard Deviation of Summary Scores for a College Sample

	Individual Adequacy			Social Adequacy		
	mean	s.d.	n	mean	s.d.	n
Simon's Rock Freshmen						
Form B	9.46	.99	68	10.31	.73	68
Form C	9.09	1.43	68	10.47	1.12	68